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| 10/602,358   | 06/23/2003  | Leonard N. Schiff    | 000010UI/QUALP853USA                 | 8897             |
| 70797  | 7590        | 11/16/2007           |                                      |                  |
| Amin, Turocy & Calvin LLP<br>1900 E. 9th Street<br>24th Floor, National City Center<br>Cleveland, OH 44114 |             |                      | EXAMINER<br>LEE, ANDREW CHUNG CHEUNG |                  |
|  |             |                      | ART UNIT                             | PAPER NUMBER     |
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|  |             |                      | NOTIFICATION DATE                    | DELIVERY MODE    |
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

Application No.

10/602,358

Applicant(s)

SCHIFF, LEONARD N.

Examiner

Andrew C. Lee

Art Unit

2619

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 29 August 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1 - 23, 26 - 32, 35 - 37, 39 - 42 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 - 23, 26 - 32, 35 - 37, 39 - 42 is/are rejected.
- 7) ☒ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Amendment***

1. Claims 1 – 23, 26 – 32, 35 – 37, 39 – 42 are pending.  
Claims 24, 25, 33, 34, 38 had been canceled.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 – 23, 26 – 32, 35 – 37, 39 – 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Beshai et al. (6034960) in view of Becker et al. (US 7133424 B2).

Regarding claim 1, 35, Beshai et al. disclose a method, a terminal device comprising: receiving, at a terminal device, one or more scattering instructions, the scattering instructions providing information for temporally scattering at least one portion of a plurality of time slot data of a time slot ("applying reverse-binary ordering to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations" correlates to scattering instructions providing information for temporally scattering at least one portion of a plurality of time slot data of a time slot, Fig. 7, column 5, lines 1 – 7, column 8, lines 16 – 28), the temporal scattering time slot data into at least two temporally non-contiguous time intervals ("receive the well-scattered time-slots 0, 4, 8 and

12" correlates to the temporal scattering time slot data into at least two temporally non-contiguous time intervals, Fig. 7, column 8, lines 16 – 28); and transmitting the temporally scattered data ("dequeued from the cell buffer memory to the link for transmission" correlates to transmitting the temporally scattered data, Fig. 9, column 10, lines 28 – 34).

Beshai et al. do not disclose explicitly the temporal scattering dividing the at least one portion of time slot data into at least two temporally non-contiguous time intervals.

Becker et al. teach the temporal scattering dividing the at least one portion of time slot data into at least two temporally non-contiguous time intervals ("one time synchronization code sequence is divided into ten time intervals" correlates to temporal scattering dividing the at least one portion of time slot data into at least two temporally non-contiguous time intervals, Fig. 3, column 5, lines 65 – 67, column 6, lines 1 -2, column 8, lines 27 – 32).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Beshai et al. to include the features of the temporal scattering dividing the at least one portion of time slot data into at least two temporally non-contiguous time intervals as taught by Becker et al. in order to provide a device for time slot synchronization of a mobile station with a base station, in which the device has a low memory space requirement (as suggested by Becker et al., see column 2, lines 16 – 19).

Regarding claims 2, 9, 36, Beshai et al. disclose the method, terminal device, apparatus of claimed, further comprising receiving configuration information, wherein the one or more scattering instructions are included with the configuration information

("updated with stream-number entries using reverse-binary mapping, each stream will receive a well-scattered assortment of time-slots" correlates to receiving configuration information, wherein the one or more scattering instructions are included with the configuration information; Fig. 6, Fig. 7, column 8, lines 11 – 24).

Regarding claims 3, 10, 37, Beshai et al. disclose the method, terminal device, apparatus claimed a memory for storing time-scattering control information (Fig. 1, element 2 cell buffer memory, column 5, lines 10 – 17), wherein one or more scattering instructions comprise an index into a memory of stored time-scattering control information (Fig. 5, Fig. 6, Fig. 9, column 10, lines 28 – 34).

Regarding claims 4, 11, Beshai et al. disclose the method, terminal device, apparatus of claimed wherein the memory is disposed within the terminal device (Fig. 1, element 2 cell buffer memory correlates to the memory is disposed within the terminal device; column 4, lines 61 – 67).

Regarding claims 5, 13, Beshai et al. disclose the method, terminal device of claimed wherein the one or more scattering instructions comprise a tabular indication of how to temporally scatter the data (Fig. 4, Fig. 5, column 7, lines 25 – 41).

Regarding claim 6, Beshai et al. disclose the method of claimed wherein the tabular

indication specifies, by time interval identifier, a starting location for scattered data (Fig. 16, Fig. 17, column 15, lines 2 – 21).

Regarding claims 7, 14, Beshai et al. disclose the method, terminal device of claimed wherein the one or more scattering instructions comprise an algorithm for temporally scattering the data ("reverse-binary mapping" correlates to one or more scattering instructions comprise an algorithm for temporally scattering the data; Fig. 4, Fig. 5, column 7, lines 25 – 47).

Regarding claims 8, 12, Beshai et al. disclose a terminal device ("switch", Fig. 1), comprising: a processor (Fig. 1, element 3 "link controller" correlates to a processor; column 4, lines 61 – 67); a memory of stored time-scattering control information coupled to the processor (Fig. 1, element 2, "a cell buffer memory", column 4, lines 61 – 67) and a machine accessible medium (Fig. 1, element 5 scheduler correlates to a machine accessible medium; column 5, lines 1 – 16), coupled to the processor, having instructions encoded therein, the instructions, when executed by the processor, cause the terminal device to: receive one or more scattering instructions, the scattering instructions providing information for temporally scattering at least one portion of a plurality of time slot data ("applying reverse-binary ordering to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations" correlates to receive one or more scattering instructions , the scattering instructions providing information for temporally scattering at least one portion of a plurality of time slot data of a time slot, Fig. 7, column 5,

lines 1 – 7, column 8, lines 16 – 28), the temporal scattering dividing the at least one portion of time slot data into at least two temporally non-contiguous time intervals (“receive the well-scattered time-slots 0, 4, 8 and 12” correlates to the temporal scattering dividing the at least one portion of time slot data into at least two temporally non-contiguous time intervals, Fig. 7, column 8, lines 16 – 28); and transmitting the temporally scattered data (“dequeued from the cell buffer memory to the link for transmission” correlates to transmitting the temporally scattered data, Fig. 9, column 10, lines 28 – 34).

Regarding claims 15, 26, Beshai et al. disclose the limitation of a method, apparatus comprising: receiving a request from a terminal device for access to a communications channel (“applying reverse-binary ordering to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations” correlates to receiving a request from a terminal device for access to a communications channel, Fig. 7, column 5, lines 1 – 7, column 8, lines 16 – 28); generating a schedule of transmission for the terminal device (“applying reverse-binary ordering” correlates to generating a schedule of transmission, column 8, lines 16 – 20), the schedule dividing the terminal device's transmissions of time slot data into at least two temporally non-contiguous time intervals (“receive the well-scattered time-slots 0, 4, 8 and 12” correlates to the schedule dividing the terminal device's transmissions of time slot data into at least two temporally non-contiguous time intervals, Fig. 7, column 8, lines 16 – 28); and transmitting the schedule of transmission to the terminal device (“dequeued from the cell buffer memory to the link for

transmission" correlates to transmitting the schedule of transmission to the terminal device, Fig. 9, column 10, lines 28 – 34, column 9, lines 37 – 52).

Regarding claims 16, 27, Beshai et al. disclose the method, apparatus of claimed wherein receiving the request comprises receiving an indication of the amount of data queued at the terminal device for communication ("The header row specifies the guaranteed time-slot allocations required by each stream" correlates to receiving an indication of the amount of data queued at the terminal device for communication, Fig. 10, column 9, lines 55 – 60).

Regarding claims 17, 28, Beshai et al. disclose the method, apparatus of claimed wherein the schedule of transmission comprises a list of time intervals ("the number of time-slots actually allocates to each stream over several frame-cycles" correlates to schedule of transmission comprises a list of time intervals, Fig. 10, Fig.11, column 9, lines 55 – 65).

Regarding claims 18, 21, 29, 31, Beshai et al. disclose the method, apparatus claimed wherein each time interval comprises a starting location in a frame and a transmission duration (Fig. 10, column 9, lines 55 – 65).



Regarding claims 19, 30, Beshai et al. disclose the method, apparatus claimed further comprising transmitting modulation control information for the time scattered data (Fig. 2a, column 5, lines 17 – 26).

Regarding claim 20, Beshai et al. disclose the method claimed wherein the communications channel is divided into frames and wherein each frame is divided into a number of time slots in accordance with a dividing rate (column 9, lines 2 – 5).

Regarding claim 22, Beshai et al. teach the method, apparatus claimed wherein the starting location comprises a first time interval identifier and the transmission duration comprises a second time interval identifier (Fig. 10, column 9, lines 55 – 65).

Regarding claims 23, 32, Beshai et al. disclose the method, apparatus claimed further comprising receiving data from the terminal device, transmitted in a scattered manner per the scattering instructions, and reordering the data in accordance with the scattering schedule to obtain the data in its originally intended order (column 9, lines 55 – 67, column 10, lines 1 – 9).

Regarding claims 39, 40, 41, 42, Beshai et al. disclose a terminal device comprising: a receiver to receive data scattering instructions (“applying reverse-binary ordering to either the sequence in which time –slots are updated ...is an effective way of scattering the time-slot allocations” correlates to scattering instructions providing information for temporally scattering at least one portion of a plurality of time slot data of a time slot, Fig. 7, column 5,

lines 1 – 7, column 8, lines 16 – 28); a transmitter to transmit, a processor configured to, in accordance with the data scattering instructions, temporally scattered data comprising time slot data, of at least one portion of a time slot (“receive the well-scattered time-slots 0, 4, 8 and 12” correlates to the temporal scattering time slot data into at least two temporally non-contiguous time intervals, Fig. 7, column 8, lines 16 – 28, “dequeued from the cell buffer memory to the link for transmission” correlates to transmitting the temporally scattered data, Fig. 9, column 10, lines 28 – 34)

Beshai et al. do not disclose explicitly temporally scattered data comprising time slot data, of at least one portion of a time slot, divided into at least two temporally non-contiguous time intervals, each time interval having a duration shorter than a time slot duration.

Becker et al. teach temporally scattered data comprising time slot data, of at least one portion of a time slot, divided into at least two temporally non-contiguous time intervals, each time interval having a duration shorter than a time slot duration (one time synchronization code sequence is divided into ten time intervals” correlates to scattered data comprising time slot data, of at least one portion of a time slot, divided into at least two temporally non-contiguous time intervals, and where “each time interval thus corresponds to a period of 256 chips of the time slot synchronization code sequence “ correlates to each time interval having a duration shorter than a time slot duration, , Fig. 3, column 5, lines 65 – 67, column 6, lines 1 -2, column 8, lines 27 – 32)

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the teachings of Beshai et al. to include the features of

temporally scattered data comprising time slot data, of at least one portion of a time slot, divided into at least two temporally non-contiguous time intervals, each time interval having a duration shorter than a time slot duration as taught by Becker et al. in order to provide a device for time slot synchronization of a mobile station with a base station, in which the device has a low memory space requirement (as suggested by Becker et al., see column 2, lines 16 – 19).

### ***Response to Arguments***

4. Applicant's arguments filed on 8/29/2007 with respect to claims 1 – 23, 26 – 32, 35 – 37, 39 – 42 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a) Hangen et al. (4792948) disclose a communication network made up of distributed switching stations controlled by a network control center.
- b) Dutta (US 6301232 B1) disclose a method configures at least one channel group of a communication system. The channel group includes at least one forward channel and at least one return channel.
- c) Kim et al. (4625308) disclose an all digital TDMA dynamic channel allocated satellite communications system and method provides a satellite communications network between geographically separated nodes. The topology of the network

is controlled by an on-line master node in accordance with user demands and operator commands received from the nodes in the network.

**Conclusion**

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew C. Lee whose telephone number is (571) 272-3131. The examiner can normally be reached on Monday through Friday from 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Andrew C. Lee/<11/05/2007>

EDAN . ORGAD  
SUPERVISORY PATENT EXAMINER

*Edan Orgad* 11/10/07